Question Number : 54 Question Id : 640653825631 Question Type : MCQ
Correct Marks : 1
Question Label : Multiple Choice Question
Complete blank (iv) with an appropriate response.
Options :
6406532776266. ✖ When will you come home?
6406532776267. ✔ Do you remember him?
6406532776268. ✖ Did you have dinner?
6406532776269. ✖ Did you meet him?

Question Number : 55 Question Id : 640653825632 Question Type : MCQ
Correct Marks : 1
Question Label : Multiple Choice Question
Complete blank (v) with an appropriate response.
Options :
6406532776270. ✔ That is amazing news!
6406532776271. ✖ Thank you!
6406532776272. ✖ You are welcome!
6406532776273. ✖ I am sorry!

Sem1 Maths1

Section Id :	64065359240
Section Number :	3
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	10
Number of Questions to be attempted :	10
Section Marks :	40
Display Number Panel :	Yes
Section Negative Marks :	0
Group All Questions :	No
Enable Mark as Answered Mark for Review and Clear Response :	No
Section Maximum Duration :	0
Section Minimum Duration :	0
Section Time In :	Minutes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	640653122916

Question Shuffling Allowed : No

Question Number : 56 Question Id : 640653825633 Question Type : MCQ

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "FOUNDATION LEVEL : SEMESTER I : MATHEMATICS FOR DATA SCIENCE I (COMPUTER BASED EXAM)"

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?
CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

Options :

6406532776274. ✔ YES

6406532776275. ✖ NO

Question Number : 57 Question Id : 640653825634 Question Type : MCQ

Correct Marks : 0

Question Label : Multiple Choice Question

Instructions:

- There are some questions which have functions with discrete valued domains (such as day, month, year etc).
- For NAT type question, enter only one right answer even if you get multiple answers for that particular question.
- Notations:
  - $\mathbb{R}$= Set of real numbers
  - $\mathbb{Q}$= Set of rational numbers
  - $\mathbb{Z}$= Set of integers
  - $\mathbb{N}$= Set of natural numbers
- The set of natural numbers includes 0.

Options :

6406532776276. ✔ Instructions has been mentioned above.

6406532776277. ✖ This Instructions is just for a reference & not for an evaluation.

Sub-Section Number : 2

Sub-Section Id : 640653122917

Question Shuffling Allowed : No

Question Id : 640653825635 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix

Question Numbers : (58 to 60)

Question Label : Comprehension

Suppose A is the set of even positive integers less than or equal to 20 and B is the set of positive integers less than 20 which are divisible by 6.

Consider the following relations from A to B.

- $R_1 = \{(a, b) \mid a \in A, b \in B, a \text{ is a factor of } b\}$
- $R_2 = \{(a, b) \mid a \in A, b \in B, (a + b) \bmod 10 = 0\}$

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 58 Question Id : 640653825636 Question Type : SA

Correct Marks : 3

Question Label : Short Answer Question

What is the cardinality of $R_1 \cap R_2$?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 59 Question Id : 640653825637 Question Type : SA

Correct Marks : 2

Question Label : Short Answer Question

What is the cardinality of R_1?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

9

Question Number : 60 Question Id : 640653825638 Question Type : MSQ

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following statements are correct?

Options :

6406532776280. ✔ R_1 is transitive.

6406532776281. ✖ R_2 is transitive.

6406532776282. ✔ R_2 is not symmetric.

6406532776283. ✔ (2,18) is an element in R_2.

Question Id : 640653825640 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix

Question Numbers : (61 to 62)

Question Label : Comprehension

Suppose that P_1 and P_2 are two different points in a Cartesian coordinate system, with P_1 located at (3,−2) and P_2 at (−1, 5). Let L_1 and L_2 be lines passing through P_1 and P_2 respectively.

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 61 Question Id : 640653825641 Question Type : MCQ

Correct Marks : 4

Question Label : Multiple Choice Question

If the $x-$intercept of the line L_1 is 1 and the angle between L_1 and L_2 is $\frac{\pi}{2}$ then

Determine the coordinates of the point where L_1 and L_2 intersect.

Options :

6406532776285. ✖ $(\frac{5}{2}, \frac{7}{2})$

6406532776286. ✖ $(5, 11)$

6406532776287. ✖ $(-5, 7)$

6406532776288. ✔ $(\frac{-5}{2}, \frac{7}{2})$

Question Number : 62 Question Id : 640653825642 Question Type : MCQ

Correct Marks : 4

Question Label : Multiple Choice Question

If the $x-$intercept of the line L_1 is 1 and $y-$ intercept of the line L_2 is -1 and If θ is the angle between L_1 and L_2, then tan θ is equal to

Options :

6406532776289. ✖ $\frac{-5}{7}$

6406532776290. ✔ $\frac{5}{7}$

6406532776291. ✖ $\frac{5}{3}$

6406532776292. ✖ $\frac{4}{7}$

Sub-Section Number :	3
Sub-Section Id :	640653122918
Question Shuffling Allowed :	Yes

Question Number : 63 Question Id : 640653825639 Question Type : SA

Correct Marks : 4

Question Label : Short Answer Question

A company opened recruitment for the post of data analyst. 500 candidates have applied for the post. 285 candidates are proficient in Python programming, 195 candidates are proficient in *C* programming, 115 candidates are proficient in Java programming, 45 candidates are proficient in Python and Java, 70 candidates are proficient in *C* and Python, 50 candidates are proficient in *C* and Java and 50 candidates don't know any of the programming languages. Find the number of candidates who are proficient in exactly one of the three programming languages.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

325

Question Number : 64 Question Id : 640653825643 Question Type : SA

Correct Marks : 4

Question Label : Short Answer Question

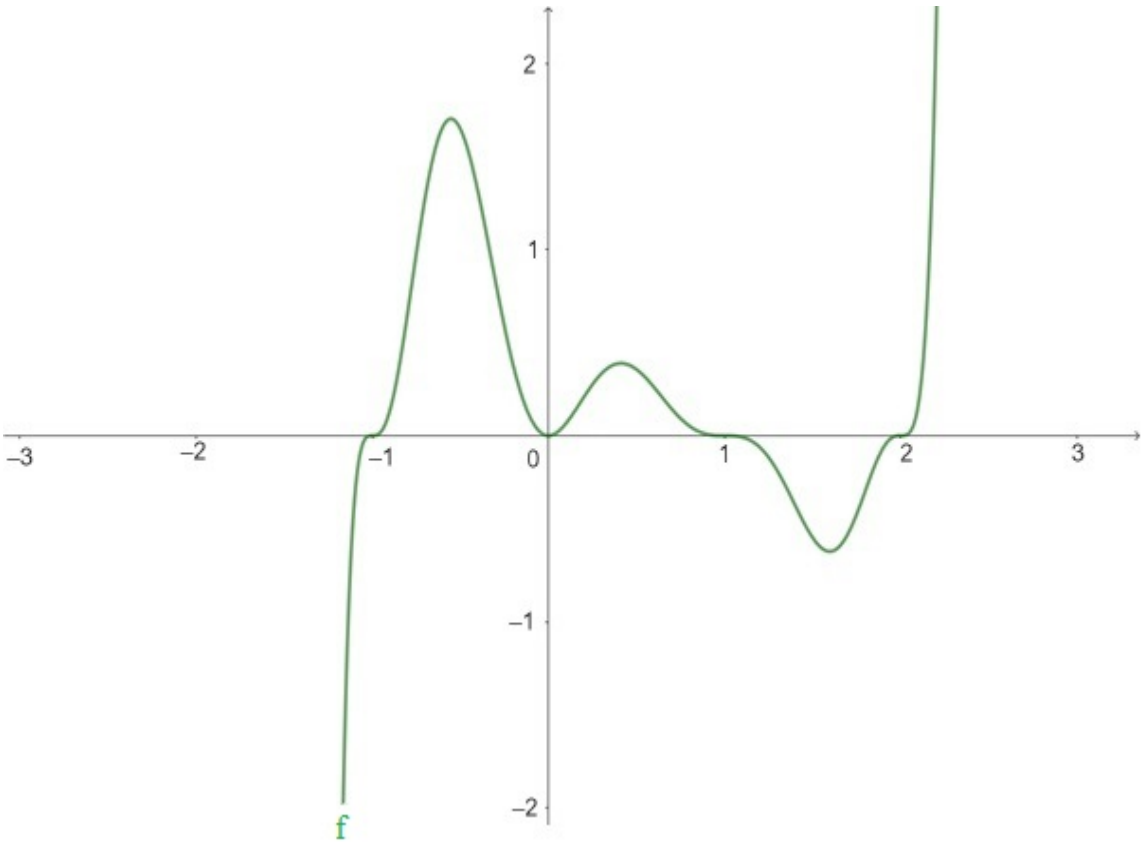
Radhika has been tracking her monthly expenses and the corresponding number of outings she has with friends. Here's a table with two rows representing the amount spent on entertainment and the corresponding number of outings. Let's consider y to be the amount spent and x to be the corresponding number of outings. She fitted a best fit line to her data and obtained the equation $y = 4x + 15$. What is the value of SSE (Sum of Squared Errors) in relation to the best fit line?

Amount spent	37	44	53	50	57	64
Number of outings	5	7	9	8	10	12

Response Type : Numeric
Evaluation Required For SA : Yes
Show Word Count : Yes
Answers Type : Equal
Text Areas : PlainText
Possible Answers :
23

Sub-Section Number : 4
Sub-Section Id : 640653122919
Question Shuffling Allowed : Yes

Question Number : 65 Question Id : 640653825644 Question Type : MSQ
Correct Marks : 4 Max. Selectable Options : 0
Question Label : Multiple Select Question
Consider the following polynomial $p(x)$ whose graph is given below:-



Which of the following options is/are correct?

Options :

6406532776294. ✖ Multiplicity of -1 and 1 must be the same.

6406532776295. ✔ $p(x)$ is an increasing function in the interval $(2, \infty)$.

6406532776296. ✔ $p(x)$ tends to infinity as x tends to infinity.

6406532776297. ✖ The number of turning points is 5.

Question Number : 66 Question Id : 640653825645 Question Type : MSQ
Correct Marks : 4 Max. Selectable Options : 0

Question Label : Multiple Select Question

Consider the parabola $y = x^2 + 4x + 12$. Which of the following option(s) are true?

Options :

6406532776298. ✖ The co-ordinates of vertex is (−8, 2).

6406532776299. ✔ The given equation attains it minima at $x = -2$.

6406532776300. ✔ y-intercept of parabola is 12.

6406532776301. ✔ The minimum value for the given equation is 8

Question Number : 67 Question Id : 640653825647 Question Type : MSQ
Correct Marks : 4 Max. Selectable Options : 0

Question Label : Multiple Select Question

Consider the polynomials $p(x) = (2x - 1)(x - 5)q(x)$ where the zeros of $p(x)$ with multiplicity 1 are $\frac{1}{2}, 5, 2, \frac{3}{5}$. Which of the following option(s) are true for $q(x)$?

Options :

6406532776306. ✖ $q(x)$ is a cubic polynomial.

6406532776307. ✔ $q(x)$ is a quadratic polynomial.

6406532776308. ✔ $q(x)$ has two distinct zeros.

6406532776309. ✖ $q(x)$ does not have any real zeros.

Sub-Section Number : 5

Sub-Section Id : 640653122920

Question Shuffling Allowed : Yes

Question Number : 68 Question Id : 640653825646 Question Type : MCQ
Correct Marks : 4

Question Label : Multiple Choice Question

Consider the quadratic equation $ax^2 + bx + c = 0$ where a, b, c are integers with $a \neq 0$.
Which of the following option(s) are true?

Options :

6406532776302. ✔ If $b^2 - 4ac > 0$ and a perfect square then there exists a rational root of the quadratic equation.

6406532776303. ✖ If $b^2 - 4ac > 0$ and not a perfect square then there exists a rational root of the quadratic equation.

6406532776304. ✖ If $b^2 - 4ac < 0$ and a perfect square then there exists a rational root of the quadratic equation.

6406532776305. ✖ If $b^2 - 4ac < 0$ and not a perfect square then there exists a rational root of the quadratic equation.

Sem1 Statistics1

Section Id :	64065359241
Section Number :	4
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	14
Number of Questions to be attempted :	14
Section Marks :	40
Display Number Panel :	Yes
Section Negative Marks :	0
Group All Questions :	No
Enable Mark as Answered Mark for Review and Clear Response :	No
Section Maximum Duration :	0
Section Minimum Duration :	0
Section Time In :	Minutes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	640653122921
Question Shuffling Allowed :	No

Question Number : 69 Question Id : 640653825648 Question Type : MCQ

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "FOUNDATION LEVEL : SEMESTER I : STATISTICS FOR DATA SCIENCE I (COMPUTER BASED EXAM)"